

**METHOD AND SYSTEM FOR MEASURING DIFFERENTIAL
SCATTERING OF LIGHT OFF OF SAMPLE SURFACES**

ABSTRACT OF THE DISCLOSURE

A method is provided for estimating scattering and includes providing a distribution expression that includes first, second, and third integrals over a source solid angle, a sample area, and detector solid angle respectively, and an integrand that includes a differential-scattering profile; approximating the first and second integrals to be the second integral, wherein the source electromagnetic radiation is approximated to be collimated; approximating the second and third integral to be the third integral, wherein a detector for detecting the electromagnetic radiation scattered from the surface is approximated to be a point detector; transforming the coordinates of the third integral over detector solid angle to be a fourth integral over a single dimension in cosine space, wherein the surface is approximated to be shift invariant; differentiating the fourth integral with respect to the single dimension to generate the differential-scattering profile; and generating an optical system design based on the differential-scattering profile.

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